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(54) ACUPOINT DEVICE

(71) I, PETER GILHEAD, a British Subject of, 44 Princes Avenue, Finchley, London, N.3, do hereby declare the invention, for which I pray that a Patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to treatment of the human body and is particularly concerned with a device for diagnosing and/or treating human ailments by passing electric current along certain paths in a patient's body.

The invention is closely related to the ancient method of healing known as acupuncture. This method has been practised for centuries and is believed to have originated in China several thousand years ago. Practitioners of acupuncture have normally explored a patient's skin by application of pressure with a forefinger in order to seek out areas which may be very tender and which have been termed "acupuncture points". There are many such points on the human body and a particular point may be associated with a particular ailment so that the presence of a pressure-sensitive point is an indication of the nature of an ailment requiring treatment. Once a pressure-sensitive acupuncture point has been located it is subjected to pain-relieving treatment by puncturing of the skin with a fine metal needle. It will be realised that the method of locating acupuncture points by exploratory action with a forefinger may not prove very accurate, except possibly after long experience.

It has already been proposed to locate and treat acupuncture points by electrical means. In electrical methods there is no puncturing of the skin but a similar effect is achieved by the setting-up of accurately localised and intense pain by the temporary passage of an electric current. The feeling that the skin is being punctured by a needle can thus be simulated by the electrical means. Since there is in fact no puncturing of the skin the expression "acupuncture" may be misleading when applied to treatment by electrical means. It has therefore already been proposed to use instead the analogous term "acupoint" in order to emphasize that there is no puncturing involved and this term will be used hereinafter to identify electrical acupuncture methods and apparatus.

It is believed that there may be as many as 800 acupuncture points on the human body but the location of far fewer points than this will suffice for the purpose of most treatment by acupoint apparatus. The present inventor has made a selection of 116 points which are associated with so-called meridians, which may be considered as lines linking a number of points together. There are fourteen different meridians on the human body, on twelve of which lie the 116 points referred to; the meridians are, however, bilateral so that 232 points are accounted for. These points are not only capable of releasing physical tension or pain, but can also directly affect psychological conditions.

Acupoint apparatus takes advantage of differences in resistance to the passage of electric current along certain paths through the human body, and therefore makes use of resistance sensitive means whereby such a path of low resistance may be established between a relatively fixed electrode (conveniently held in the patient's hand) and a movable electrode in the form of a probe by which the patient or practitioner traces a sensitive point on the low-resistance path (which corresponds to a particular meridian). The apparatus may be used for diagnostic and sedative treatment and it is unnecessary for the practitioner to acquire any detailed knowledge of the art of acupuncture. One form of acupoint apparatus which uses low frequency electric current is described and illustrated in British Patent

Specification No. 997670.

According to the present invention there is provided a device for diagnosing and/or treating human ailments comprising a casing providing a housing for an electric battery and containing contacts for electrical connection with the battery terminals, a first output electrode in the form of a probe which can be moved over the patient's body, a second output electrode formed by at least part of the casing or attached thereto, said first and second electrodes being respectively electrically connected to said contacts for passing direct current in an external circuit between the electrodes, current sensitive means mounted in or on the casing and connected in circuit with said contacts and the electrodes, the current sensitive means including means for producing an indication of any relatively low resistance path in said external circuit, and a switch selectively operable to make and break said circuit.

Preferably the means for producing the said indication is a light source mounted on or in the casing so that a visual indication of any low resistance path is produced. A potentiometer may be arranged in series with the battery terminals. The current sensitive means may include a transistorised d.c. amplifier which effectively increases such current as may flow through the human body to a value sufficient to operate the indicating means, which may, for example, be a small filament bulb or a light emitting diode.

One form of device in accordance with the present invention comprises a torch-like cylindrical casing which contains a 9v. dry battery connected to two output electrodes and current sensitive means including a transistorised d.c. amplifier and a light emitting diode. One electrode is formed by the casing and is connected to one battery terminal through a potentiometer and the other electrode is formed by a stainless steel probe which extends from one end of the cylindrical casing and is insulated therefrom by a nylon insulating head. A switch is provided so that the battery circuit can be interrupted. The potentiometer may be adjusted to vary the sensitivity of the device and the intensity of light emitted by the light emitting diode according to the natural resistance of the path through the patient's body.

A modified embodiment of the invention is shown by way of example in the accompanying drawings in which:—

Figure 1 is a longitudinal section through an acupoint device, and

Figure 2 is a circuit diagram of the electrical components of the device of Figure 1.

The acupoint device shown in Figure 1 includes a cylindrical casing 1 of electrically conductive material, such as metal. A stainless steel probe 2 is received in an insulating nose part 3 in one end of the casing 1. The central portion 4 of the nose part 3 is formed of transparent plastics material. At the other end of the casing 1 is an end cap 5 which locates a terminal connection for a standard 9v. cylindrical dry battery 6 received within the casing 1. The bottom terminal of the battery 6 is thus electrically connected to the casing 1. The top terminal 7 of the battery 6 is connected through a lead 8 to a switch assembly 9 having a spring arm 9*a* which may be depressed onto a contact 9*b* by an external switch arm 10 acting on an insulating plunger 11 mounted in a hole in the casing 1.

When closed the switch 9 causes the terminal 7 to be connected electrically to an electronic assembly 12 mounted on a base board 13 attached to the nose part 3. The assembly 12 includes a small filament bulb (not shown). This bulb may conveniently be received in a socket 14 in the transparent material 4 (which may act as a lens). In general the material 4 may be transparent or translucent and may be shaped so that light is directed in one or more preferred directions.

The components of the electronic assembly 12 are shown in diagrammatic form in Figure 2. The terminals T_1, T_2 are the negative and positive terminals respectively of the battery 6. The switch Sw_1 is the switch assembly 9. The electronic assembly 12 comprises a d.c. amplifier including three transistors Tr_1, Tr_2 and Tr_3, all of which may be of type BC 108. The base of transistor Tr_1 is connected to the probe 2 through a resistance R_1, the value of which may be selected to suit the required sensitivity. Collector resistances R_2 and R_3 are conveniently 22 Kohms and 2.2 Kohms respectively. The small filament bulb L_1 in the collector circuit of Tr_3 is 14v., 0.75 watts.

Both embodiments of the acupoint device are operated in a similar manner. The casing is held by the patient in one hand and the operating switch closed. The probe is then traced lightly over the skin in the approximate region of known acupuncture points until a point is located which is sensitive to the exploring action. Since the located point has a relatively low resistance as compared with the patient's skin as a whole an increased electric current will flow through the patient's body between the probe and the casing. The electric circuit of the device is such that increased current flowing to the probe will result in increased current flowing through the light emitting diode or filament bulb so that it will glow more brightly. Acupuncture points can therefore be identified by observation of the diode or bulb. Treatment of the point may be effected by increased pressure on the point causing a

larger current to flow (up to 100 μA), which current has a stimulating effect.

It has already been mentioned that particular ailments may be associated with particular points along a meridian. There are in existence charts which identify the ailments associated with the points along a meridian and an example of one such chart is described and illustrated in British Patent Specification No. 997670.

The use of gold or silver probes as disclosed in the above specification or the use of probes of other metals is also envisaged.

WHAT I CLAIM IS:—

1. A device for diagnosing and/or treating human ailments comprising a casing providing a housing for an electric battery and containing contacts for electrical connection with the battery terminals, a first output electrode in the form of a probe which can be moved over the patient's body, a second output electrode formed by at least part of the casing or attached thereto, said first and second electrodes being respectively electrically connected to said contacts for passing direct current in an external circuit between the electrodes, current sensitive means mounted in or on the casing and connected in circuit with said contacts and the electrodes, the current sensitive means including means for producing an indication of any relatively low resistance path in said external circuit, and a switch selectively operable to make and break said circuit.

2. A device as claimed in claim 1 wherein the casing is generally cylindrical and wherein the probe extends from one end of the cylindrical casing.

3. A device as claimed in claim 1 or claim 2 wherein the means for producing an indication of any relatively low resistance path across the electrodes comprises a light source.

4. A device as claimed in claim 3 wherein the light source is a filament bulb.

5. A device as claimed in claim 3 wherein the light source is a light emitting diode.

6. A device as claimed in any one of claims 3 to 5 wherein the light source is contained within the casing and the casing is provided with a transparent or translucent part for direct or indirect observation of the light source.

7. A device as claimed in claim 6 wherein the probe projects from the casing through said transparent or translucent part.

8. A device as claimed in any one of claims 1 to 7, wherein the current sensitive means includes a transistorised *d.c.* amplifier.

9. A device as claimed in any one of claims 1 to 8, including means for varying the sensitivity of the current sensitive means.

10. A device as claimed in any one of claims 1 to 9, wherein the probe is of stainless steel.

11. A device for diagnosing and/or treating human ailments substantially as herein described with reference to and as illustrated in the accompanying drawings.

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

FIG. 1.

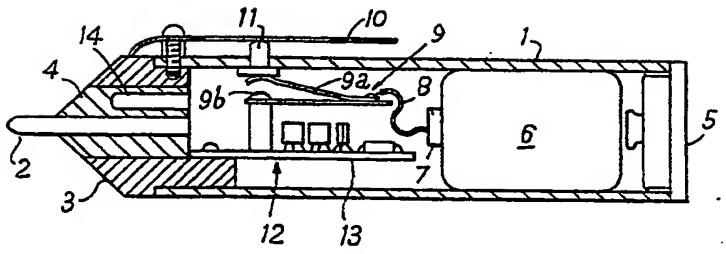

FIG. 2.